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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,613	09/29/2003	Murray W. Mahoney	02RSC064	2554
44859	7590	10/20/2006	EXAMINER	
JOHN J. DEINKEN 1049 CAMINO DOS RIOS P. O. BOX 1085 THOUSAND OAKS, CA 91358-0085			HUNTER, ALVIN A	
			ART UNIT	PAPER NUMBER
			3711	

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/673,613

Applicant(s)

MAHONEY, MURRAY W.

Examiner

Alvin A. Hunter

Art Unit

3711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18, 20, 23, 24 and 26-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18, 20, 23, 24, and 26-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

Claims 18, 20, 23, and 24, 32, and 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 18, applicant includes the limitation "friction stir processed region is not adjacent an insert attached to a golf face." This language is not understood. Does the applicant intend for the limitation to exclude any region outside of an insert? For the purpose of examination, the limitation will be interpreted as noted above.

With respect to claims 32 and 33, is the face casted or forged or is the club head unitary wherein the entire club head, including the face, is casted or forged? For the purpose of examination, claims 32 and 33 will be interpreted in the light of the club head, excluding the face, being casted or forged

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18, 20, 23, 24, 26-30, 32, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. (JP 2001-231895) in view of Forrest et al. (USPN 6398883).

Regarding claim 18, Matsumoto et al. discloses a golf club head having a face 25 with a surface for contacting a golf ball wherein the surface has different hardnesses in which is hardest at the center zone 25a and decreases toward the periphery zone 25b (See Abstract and Figures 2 and 4). Matsumoto et al. notes that the hardnesses of the face are obtained through heat treatment but does not disclose the face being friction stir processed. Forrest et al. discloses a method for improved the structural strength of a member by use of friction stir processing, FSP (See Abstract). Forrest et al. notes that the process can be used to reduce time and labor associated with heat treatment processes (See Background of the Invention). Further, Forrest et al. notes that the process can be used on materials such as stainless steel, titanium, aluminum, etc. (See Summary of the Invention). Matsumoto et al. also notes that stainless steel, titanium, and aluminum (Paragraph 0011). One having ordinary skill in the art would have found it obvious to friction stir process the center zone or any other zone of the face of Matsumoto, as taught by Forrest et al., in order to reduce labor and time.

Regarding claim 20, see the above regarding claim 18.

Regarding claim 23, Matsumoto et al. does not disclose the thickness of the center zone. Forrest et al. discloses that the friction stir processed region is less than 0.25 inches, or 6mm, for preferably thin pieces (See Paragraph bridging Columns 7 and 8). One having ordinary skill in the art would have found it obvious to have the face of Matsumoto et al. of any thickness less than 6mm, as taught by Forrest et al., in order to define a local grain structure.

Regarding claim 24, see the above regarding claim 18.

Regarding claim 26, see the above regarding claim 18. In addition Forrest et al. notes that after friction stir welding that the piece may be machined to attain a finished surface, i.e. desired surface topography (See Paragraph bridging Columns 7 and 8). One having ordinary skill in the art would find it obvious to resurface the friction stirred region taught by the combination for such reason.

Regarding claim 27, Matsumoto et al. shows the sweet spot extending along a centerline of the face (See Figures 2 and 4).

Regarding claim 28, Matsumoto et al. in view of Forrest et al. does not explicitly disclose the FSP tool making multiple overlapping and parallel passes; however, one skilled in the art would recognize that multiple and parallel passes are necessary in order to create the size in which the sweet spot is to occupy of the face. One having ordinary skill in the art would have found it obvious to have the tool pass using multiple overlapping and parallel passes in order to define the sweet spot without affecting the areas surrounding the sweet spot.

Regarding claim 29, see the above regarding claim 23.

Regarding claim 30, Matsumoto et al. does not disclose the rate of rotation and passing of the FSP tool. Forrest et al. discloses the FSP tool passing through the piece at 5 to 30 inches/min, or 126 to 762 mm/min (See Column 8, lines 5 through 38). Further, applicant admits on page 7, lines 12 through 24, that the claimed limitations are typical for FSP tools; therefore, one would find it obvious simply because it is conventional.

Regarding claim 32, applicant admit within the "description of relevant art" that forging is a typical process used for making club head; therefore, one having ordinary skill in the art would have found it obvious to use for such reason.

Regarding claim 33, applicant admits within the "description of relevant art" that casting is a typical process used for making club heads; therefore, one having ordinary skill in the art would have found it obvious to use for such reason. Further, Forrest et al. notes that the piece may be cast to the desired configuration prior to FSP (See Column 5, lines 41 through 62).

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masumoto et al. (JP 2001-231895) in view of Forrest et al. (USPN 6398883) further in view of Keener (USPN 5029864).

Regarding claim 31, Matsumoto et al. shows grooves being on the face of the club head and Forrest et al. discloses machining the piece after friction stir processing, but the combination does not explicitly teach the grooves being milled on the face of the club head. Keener discloses a club head having a face with grooves in which the grooves are milled onto the face of the club head (See Column 4, lines 26 through 39). In particular the grooves of Keener increases backspin (See Abstract). One having ordinary skill in the art would have found it obvious to have the grooves disclosed by the combination of Matsumoto et al. in view of Forrest et al. to that taught by Keener et al. in order to increase backspin.

Response to Arguments

Applicant's arguments with respect to claims 18, 20, 23, 24, and 26-33 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alvin A. Hunter whose telephone number is (571) 272-4411. The examiner can normally be reached on Monday through Friday from 7:30AM to 4:00PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Kim, can be reached on 571-272-4463. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Alvin A. Hunter, Jr.